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LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			EXAMINER GISHNOCK, NIKOLAI A	
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			3714	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/06/2007	ELECTRONIC

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<b>Office Action Summary</b>	<b>Application No.</b> 10/723,049	<b>Applicant(s)</b> HUA ET AL.	
	<b>Examiner</b> Nikolai A. Gishnock	<b>Art Unit</b> 3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/26/2003</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The Examiner requests that the correct serial number and updated status of all related US applications incorporated by reference be inserted.

### ***Claim Objections***

2. Claim 8 is objected to because of the following informalities: The claim lacks a predicate. Appropriate correction is required.
3. Claim 37 is objected to because of the following informalities: The claim depends from itself. The claim will be treated in this Office Action as depending from claim 36. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. Claims 1, 2, 8, 20, 23-25, 29, 40, & 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Stelovsky (US 5,782,692), hereinafter known as Stelovsky. Stelovsky discloses a processor-readable medium comprising executable instructions for personalizing karaoke (Column 1, Lines 54-67), comprising: segmenting visual content to produce a plurality of sub-shots and segmenting music to produce a plurality of music sub-clips (multimedia presentation track consisting of video, audio, and text display is segmented with respect to specific beginning and ending points, Column 3, Lines 27-65); and displaying at least some of the plurality of sub-shots as a background to lyrics associated with the plurality of music sub-clips ("Karaoke Game" presentation has synchronized video and instrumental sound tracks, Column 9, Lines 15-21; the text can be superimposed on the video, Column 10, Lines 5-6) [Claims 1 & 8]. Stelovsky discloses instructions for shortening some of the plurality of sub-shots to a length of a corresponding music sub-clip (the system displays the current segment's start and end points, so the author can select and edit the boundary points, Column 7, Lines 14-19) [Claim 2]. Stelovsky discloses instructions for: obtaining lyrics from a file (textual track can be generated remotely and transmitted using communications means, Column 14, Lines 20-24); and coordinating delivery of the lyrics with the music using timing information contained within the file (Column 3, Lines 52-65) [Claim 20]. Stelovsky discloses a processor-readable medium comprising instructions for providing lyrics for integration with karaoke music, comprising instructions for: receiving a request for a file associated with a specific song (clicking on a word in the text track, Column 14, Lines 42-48), wherein the file associates each syllable and sentence contained within the lyrics with timing values (user gets evaluation feedback including visualization of differences in pronunciation patterns, processes involved in generating {human} speech, such as positions of the tongue and air flow patterns, Column 14, Lines 52-59), and fulfilling the request by sending the file (connection is established with a remote on-line service,

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search query initiated, and results are displayed, Column 14, Lines 42-48) [Claim 23]. Stelovsky discloses wherein obtaining lyrics comprises instructions for sending the file over a network to a karaoke device (textual track can be generated remotely and transmitted using communications means, Column 14, Lines 20-24; on-line services provide downloading of files, e.g. Internet, Column 6, Lines 49-50) [Claim 24]. Stelovsky discloses a personalized karaoke device, comprising: a music analyzer configured to create music sub-clips of varying lengths according to a song (Segmentation Authoring System {SAS} facilitates the identification of points in time where a segment starts and ends, Column 5, Line 62 to Column 6, Line 2; multimedia presentation track consisting of video, audio, and text display is segmented with respect to specific beginning and ending points, Column 3, Lines 27-65); a visual content analyzer configured to define and select visual content sub-shots (Using SAS, the author partitions the multimedia presentation into time segments according to predominant time units, e.g., measures of song, sound bites, or action sequences in a movie, Column 6, Lines 51-54); a lyric formatter configured to time delivery of syllables of lyrics of the song (evaluation feedback of user's input includes visualization of differences in pronunciation patterns, processes involved in generating {human} speech, such as positions of the tongue and air flow patterns, Column 14, Lines 52-59; it is inherent that the speech analysis as disclosed could recognize syllables and sentences, which are pronunciation patterns); sections of the text track are linked to the time segments, Column 6, Line 55); and a composer configured to assemble the music sub-clips with the visual content sub-shots, and configured to adjust the length of the sub-shots to correspond to the music sub-clips, and to superimpose the syllables of the lyrics of the song over the sub-shots ({SAS} sections of a text track and additional media resources are linked to the time segments, Column 6, Lines 55-57) [Claim 25]. Stelovsky discloses wherein the visual content analyzer is configured to segment video into sub-shots (Column 6, Lines 51-54) [Claim 29].

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Stelovsky discloses an apparatus, comprising: means for creating music sub-clips according to a song, and means for defining and selecting visual content sub-shots (multimedia presentation track consisting of video, audio, and text display is segmented with respect to specific beginning and ending points, Column 3, Lines 27-65); means for timing delivery of syllables of lyrics of the song (sections of the text track are linked to the time segments, Column 6, Line 55; the text can be superimposed on the video, Column 10, Lines 5-6, also Column 14, Lines 52-59 and Column 9, Lines 15-21); and means for assembling the music sub-clips with the visual content sub-shots, adjusting the length of the sub-shots to correspond to the length of the music sub-clips, and to superimpose the syllables of the lyrics of the song over the sub-shots [Claim 40].

Stelovsky discloses wherein the means for defining and selecting visual content sub-shots is a video analyzer configured to segment video into sub-shots (Using SAS, the author partitions the multimedia presentation into time segments according to predominant time units, e.g., action sequences in a movie, Column 6, Lines 51-54) [Claim 41].

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky, in view of Golin (US 5,990,980), hereinafter known as Golin. Stelovsky teaches all the features as described above in the rejection of claim 1. What Stelovsky fails to teach is wherein segmenting the visual content comprises instructions for: dividing a shot into two sub-shots at a maximum peak of a frame difference curve; and repeating the dividing to result in sub-shots shorter than a maximum sub-shot length. However, Golin teaches the use of a Frame Dissimilarity Measure (FDM), which is the ratio of a net dissimilarity measure and a cumulative dissimilarity measure of two consecutive frames (Column 3, Line 65 to Column 4, Line 12). The processing of sub-shots uses the FDM to identify transitions between shots in a video sequence, which appear as peaks in the FDM data (Column 5, Lines 21-42). The data analysis for the sub-shot dividing is a loop, which starts with frames at the beginning of the video sequence and scans through the data to the frames at the end of the sequence (Column 5, Lines 54-62). The length of the entire video sequence is a maximum sub-shot length. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have used the FDM peak analysis of dividing sub-shots, as described in Golin, for the video segmenting used in Stelovsky, in order to more effectively detect gradual transitions between subshots [Claim 3].

9. Claims 4-7, 32, & 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky, in view of Osberger (US 6,670,963), hereinafter known as Osberger. Stelovsky teaches all the features as described above in the rejection of claims 1 & 25. What Stelovsky fails to teach is wherein the filtering of a plurality of sub-shots is according to importance or

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quality [Claim 4]. However, Osberger teaches giving areas of medium motion high importance (Column 7, Lines 10-21). Osberger also teaches that areas of low texture (quality) such as faces are strong attractors of attention (Column 8, Lines 40-54). The sub-shots that are high in "regions of interest", or attention attracting, are identified (filtered) as taught by Osberger (Column 2, Lines 24-41). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have used the methods of Osberger for filtering sub-shots based on attention indices such as importance to the camera and texture quality, in the karaoke video segmenting device of Stelovsky, in order to increase the entertainment value of the karaoke experience to a user [Claim 4]. What Stelovsky also fails to teach is wherein filtering the plurality of sub-shots according to importance comprises instructions for evaluating frames within a sub-shot according to attention indices, and averaging the attention indices for the frames to determine if the sub-shot should be included [Claim 6]. However, Osberger teaches identifying and adaptively segmenting frames of video based upon an attention model, AKA total importance map, composed by linear weighting of the spatial and temporal importance maps (Column 2, Lines 24-41). It is inherent that averaging is merely linear weighting with a weight factor of one. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have utilized the averaging of the attention indices of Osberger to select frames of importance, for use in the karaoke system of Stelovsky, in order to adapt the attention model for a variety of different types of video sub-shots, while accurately determining regions of interest in the videos [Claim 6]. What Stelovsky also fails to teach is wherein filtering the sub-shots according to importance comprises instructions for analyzing the camera motion, object motion, and specific objects within the subshots, and filtering the subshots according to the analysis [Claim 7], or wherein a visual content analyzer is configured to select from the sub-shots according to ranked importance, gauged by detection of color entropy, object motion,



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camera motion, or of a face within the sub-shot [Claim 32]. However, Osberger teaches selecting or filtering sub-shots by color information (Column 3, Lines 6-15), by camera or object motion (Column 7, Lines 7-37), or by specific objects, including faces, in a sub-shot (Column 8, Lines 40-54). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have used the various color, motion, and object detection in the video sub-shots, as described by Osberger, in the personalized karaoke system on Stelovsky, in order to improve the prediction of visual importance of a sub-shot [Claims 7 & 32]. What Stelovsky further fails to teach is wherein filtering the plurality of sub-shots comprises instructions for: examining color entropy within each of the plurality of sub-shots to detect motion more than a threshold indicating interest and less than a threshold indicating low camera and/or object movement; and selecting sub-shots having acceptable motion and/or color entropy scores [Claim 5], or wherein the visual content analyzer is configured to filter out sub-shots having low image quality, as measured by low entropy and low motion intensity [Claim 33]. However, Osberger teaches segmenting frames into regions based upon both color and luminance (Column 2, Lines 24-41). The term entropy is taken to mean Information Entropy or Shannon Entropy, which refers to a measure of uncertainty associated with a random variable. Thus, referring to lossless data compression, the color entropy would refer to an average minimum number of bits needed to communicate a color value. Osberger teaches using an algorithm to segment an image into homogeneous regions using color information, to generate the spatial importance map (Column 3, Lines 6-15). Osberger also teaches that, if the spatial importance map is too noisy from frame to frame, a temporal smoothing operation is performed, and a temporal importance map is generated (Column 6, Line 66 to Column 7, Line 37). The temporal importance map is calculated using adaptable thresholds because the amount of motion varies greatly across different scenes. Osberger also teaches identifying sub-shots with

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regions of interest by using the spatial and temporal interest maps in order to produce an adaptive segmentation model (Column 8, Lines 58-67), for segmenting video scenes. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have incorporated the color entropy detection, then the camera motion detection of Osberger with the segmentation of karaoke video as described by Stelovsky, in order to attract the interest of a karaoke user more effectively [Claims 5 & 33].

10. Claims 9-11 & 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky, in view of Osberger, as applied to claims 1, 8, & 25 above, and further in view of Paniconi et al. (US 2007/0064806 A1), hereinafter known as Paniconi. Stelovsky and Osberger teach all the features as shown above in the rejections of claims 1, 8, and 25 above. Osberger teaches selecting important sub-shots from within the plurality of sub-shots [Claim 9], evaluating color entropy, camera motion, and object motion, and detecting objects, and selecting the important sub-shots based on the evaluation [Claim 10]; and a visual content analyzer configured to select sub-shots of a greater importance [Claim 34]. What Stelovsky and Osberger fail to explicitly teach is wherein the sub-shots are uniformly distributed over the run-time of a source video [Claims 9, 11, & 34], or evaluating normalized entropy of the sub-shots along a time line of video from which the sub-shots were obtained [Claim 11]. However, Paniconi teaches filtering video images by distinguishing a uniform pattern of motion vectors, evenly distributed across the target images in a video compression scheme [Para. 0016-0018]. It is inherent that the filtering prediction is an attention model because, in any lossy compression scheme, frames of high importance are retained in order to convey the video information while the least important frames are discarded. Paniconi also teaches normalizing the motion vectors (low pass filter, Para. 0037-0040). Normalization of data can be described as the process of

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removing statistical errors in data. A low pass filter removes motion error, thus normalizing the entropy of video data. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have selected important yet uniformly distributed sub-shots by evaluating normalized entropy as in Paniconi, in light of the importance indices of Osberger, in the karaoke system of Stelovsky, for the purpose of maximizing the average importance of the video sub-shot while minimizing the extraneous frames of less importance by filtering [Claims 9-11 & 34].

11. Claims 12-15, 31, 36, 37, & 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky, in view of Geigel et al. (US 2002/0122067 A1), hereinafter known as Geigel. Stelovsky teaches all the features as demonstrated in the rejection of claims 1, 25, & 40 above. What Stelovsky fails to explicitly teach is wherein the instructions for segmenting visual content includes assigning photographs to be sub-shots [Claim 12], wherein the visual content comprises home video and photographs in digital formats [Claim 15], or wherein a visual content analyzer is configured to assemble still photographs, each of which is a sub-shot [Claim 31], and instructions for assigning photographs includes converting at least one photograph to video [Claim 14]. However, Geigel teaches a layout generator for digital images (Para. 0010), including photographs or video clips (Para. 0055), which converts the images into a video (output is Picture CD media or other photo delivery media, Para. 0057). It is inherent that a series of images displayed during a progression of time is a video. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have assembled and converted photos to video, as taught by Geiger, for the background video in the entertainment system of Stelovsky, in order to automate the layout of the background in a manner pleasing to the user [Claims 12, 14, 15, & 31]. What Stelovsky also fails to teach is

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wherein a visual content analyzer is configured with instructions for assigning photographs includes instructions for: rejecting photographs having problems with quality [Claim 13]; and rejecting a similar group of photographs when one within the group has been selected [Claims 13 & 37]. However, Geigel teaches performing detection of dud images and duplicate images prior to being submitted to the layout system (Para. 0061). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have not selected dud or duplicate images when creating the background image layout, as shown by Geigel, when implementing the entertainment system of Stelovsky, in order to necessitate the minimal input from the user when assembling images aesthetically pleasing to the user [Claims 13 & 37]. What Stelovsky further fails to teach is wherein a visual content analyzer is configured to organize photographs by the date of exposure and scene, thereby obtaining photographs having a relationship [Claim 36]. However, Geigel teaches organizing the images (page layout algorithm, Para 0059) by date of exposure (chronology of the images, Para. 0063) and scene (event clustering, Para. 0060). It is inherent that all the photographs would thus be related by a date range or event group. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have organized the images to the extent provided by Geigel, is the operation of the entertainment system of Stelovsky, in order to distribute the photographs automatically according to an algorithm that valued a user-pleasing arrangement [Claim 36].

12. Claims 16 & 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky, in view of Kondo (US 6,232,540 B1), hereinafter known as Kondo. Stelovsky teaches all the features as demonstrated above in the rejections of claims 1 & 25. What Stelovsky fails to teach is wherein a music analyzer is configured to segment the music automatically,

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comprising instructions for: establishing boundaries for the music sub-clips at beat positions within the music [Claim 16], or with a beat position between each of the music sub-clips [Claim 27]. However, Kondo teaches establishing boundaries (positions) for music sub-clips (rhythm sound source signals) at beat positions within the music (positions of attacks in the rhythm sounds, Abstract). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have divided the music sub-clips at beat positions within the music, as shown in Kondo, for use in the karaoke system of Stelovsky, in order to avoid occurrences of rhythm disorder in the rhythm sounds [Claims 16 & 27].

13. Claims 16 & 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky, in view of Trovato et al. (US 7,058,889 B2), hereinafter known as Trovato. Stelovsky teaches all the features as demonstrated above in the rejections of claims 1 & 25. What Stelovsky fails to teach wherein the music analyzer is configured to segment the song with a strong onset between each of the music sub-clips [Claim 26]. However, Trovato teaches locating transition points for a music segmentation scheme by onset break detection (Column 7, Lines 33-51; also Figure 6). It is inherent from Figure 6 that weak onset breaks are not used as transition points. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have analyzed the music used in the karaoke system of Stelovsky with the onset break detection method defined in Trovato, in order to automatically synchronize the music with the background video consistent with human perception [Claim 26]. What Stelovsky further fails to teach is wherein each sub-clip has a duration that is a function of song tempo [Claim 28]. However, Trovato teaches segmenting music by a tempo technique (Column 10, line 61 to Column 11, Line 12). It is inherent the segmentation is performed with respect to beat positions, because in modern music, tempo is measured in beats per minute

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(BPM). Travato also teaches using drum detection (Column 12, Lines 14-18). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have divided the music sub-clips by beat or tempo, as shown in Trovato, for use in the karaoke system of Stelovsky, in order to automatically fit music to video in a user-pleasing fashion, using an inexpensive integrated circuit [Claim 28].

14. Claims 17 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky. Stelovsky teaches all the features as demonstrated in the rejection of claim 1 above. What Stelovsky fails to explicitly teach is wherein the segmenting music comprises instructions for bounding the sub-clip's length according to: minimum length =  $\min(\max(2 \cdot \text{tempo}, 2), 4)$  and maximum length = minimum length + 2 [Claim 17], or establishing the music sub-clip's length within a range of 3 to 5 seconds [Claim 18]. However, Applicant has not disclosed that having  $(\min(\max(2 \cdot \text{tempo}, 2), 4) < \text{length} < \min(\max(2 \cdot \text{tempo}, 2), 4) + 2)$  or  $(3 < \text{length} < 5)$  seconds solves any stated problem or is for any particular purpose. Moreover, it appears that the arbitrary length of the sub-clips of Stelovsky or the Applicant's instant invention would perform equally well for synchronizing the sub-clips with a video. Accordingly, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Stelovsky such that the music sub-clips had a rigid minimum and maximum length, because such a modification would have been considered a mere design consideration, which fails to patentably distinguish over Stelovsky [Claims 17 & 18].

15. Claims 19, 39, & 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky, in view of Bloom et al. (US 2005/0042591 A1), hereinafter known as Bloom. Stelovsky teaches all the features as demonstrated above in the rejections of claims 1, 18, 25, &

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40 above, including wherein the lyric formatter is configured to consume a file detailing timing of the lyrics (the textual track can be generated remotely and transmitted by communication means, digitally, using a software program, Column 14, Lines 14-24; the digital textual track used for the karaoke is inherently a file to be "consumed" or used). Stelovsky teaches wherein evaluation of output can involve differences in pronunciation patterns and any processes involved in generating speech (Column 14, Lines 52-59). What Stelovsky fails to teach is wherein segmenting the music comprises a lyric formatter configured with instructions for establishing boundaries for the music sub-clips at sentence breaks [Claim 19], or consuming a file detailing timing of each syllable and each sentence of the lyrics [Claims 39 & 44], and for rendering the lyrics syllable by syllable [Claim 44]. However, Bloom teaches automatically synchronizing sound to images, wherein lyric segmentation may be syllable by syllable (line can be a single word or sound) or a sentence (Para. 0139). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have segmented the music of the karaoke system of Stelovsky, in light of the syllable and sentence boundaries of the lyrics as taught by Bloom, in order to synchronize the song with a user's lip movements on the accompanying video display [Claims 19, 39, & 44].

16. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky, in view of Tsai (US 6,572,381 B1), hereinafter known as Tsai. Stelovsky teaches all the features as demonstrated above in the rejections of claims 1 & 20 above. What Stelovsky fails to teach is wherein obtaining the lyrics comprises instructions for sending the file over a network to a karaoke device as part of a pay-for-play service [Claim 21]. However, Tsai teaches a plurality of karaoke terminals connected to a host computer via a network (communications line) that delivers lyric data (Column 8, Lines 48-61). Tsai teaches a karaoke system shares the source

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data as part of a pay service (Column 2, Lines 48-56; also Column 20, Line 52 to Column 21, Line 56). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have sent the lyrics file over a network in conjunction with a pay-for-play service, as taught by Tsai, in the karaoke system of Stelovsky, in order to offer commercial messages with updated custom content to a subscriber of a karaoke service [Claim 21].

17. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky, in view of Tashiro et al. (US 5,703,308), hereinafter known as Tashiro. Stelovsky teaches all the features as demonstrated above in the rejections of claim 1 above. What Stelovsky fails to teach is wherein the processor-readable medium comprises instructions for: querying a database of songs by humming a portion of a desired song; and selecting the desired song from among a number of possibilities suggested by an interface to the database [Claim 22]. However, Tashiro teaches a karaoke device having database of songs (music data storage device with a plurality of entry songs stored in a data table, Column 1, Line 54 to Column 2, Line 3), wherein the database is queried by humming a song (key melody patterns which represent a desired song are input by voice, Column 3, Lines 10-14) and selecting the desired song through an interface (music selection is made from top 10 matching entries, Column 7, Lines 48-67). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, in the karaoke system of Stelovsky, to search and select a desired song from a database by humming, as taught by Tashiro, in order to select a song even if neither the artist nor the title of the song is known [Claim 22].

18. Claims 30 & 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky, in view of Borden, IV et al. (US 2003/0200105 A1), hereinafter known as Borden IV.



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Stelovsky teaches all the features of claims 25 & 40 above. What Stelovsky fails to teach is a video analyzer or visual content analyzer configured to access folders of home video and photographs containing content from which the sub-shots are derived [Claims 30 & 42].

However, Border IV teaches a video analyzer (user's data processing device) which can access folders of a customer's video or photographs (MY PHOTOS homepage document, containing a user's uploaded images or video, Para. 0016-0017). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have accessed a user's personal video and photo content for generating the sub-shots, in the karaoke device of Stelovsky, in order to attract potential customers to receive services by hosting their personal data [Claims 30 & 42].

19. Claims 35, 38, & 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stelovsky, in view of Osberger, as applied to claims 25 & 40 above, and further in view of Geigel. Stelovsky teaches all the features of claims 25 and 40 above. What Stelovsky fails to teach is wherein a visual content analyzer is configured to reject photographs of low quality by detecting over and under exposure, overly homogeneous images, and blurred images [Claim 35]. Osberger teaches a visual analyzer (image processing algorithm) to detect overexposure and underexposure (contrast), overly homogeneous images (homogeneous regions, Column 3, Lines 6-15), and blurred images (areas of very high motion, Column 7, Lines 10-26). What Stelovsky and Osberger fail to teach is wherein the visual content analyzer rejects photographs. However, Geigel teaches selection of the best image (Para. 0057). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have rejected images which are underexposed, overexposed, overly homogeneous, or blurred, in light of the teachings of Osberger and Geigel, in the entertainment system of Stelovsky, in order

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to discriminate images to present highly desirable visuals to a karaoke user [Claim 35]. What Stelovsky further fails to teach is wherein the means for defining and selecting visual content sub-shots is a video analyzer configured for: detecting an attention area within a photograph; and creating a photo to video sub-shot based on the attention area, wherein the video includes panning and zooming [Claims 38 & 43]. Osberger teaches a visual analyzer (image processing algorithm) to detect an attention area within a photograph (Column 2, Lines 24-41), and wherein motion vectors are used by camera motion estimation algorithm to determine pan and zoom in a frame (Column 7, Lines 22-37). What Stelovsky and Osberger fail to teach is wherein photo to video subshot includes panning and zooming. However, Geigel teaches, in photography terms rather than videography terms, panning the images (auto-cropping, Para. 0057) and zooming the images (scaling, Para. 0122). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to created a photo to video sub-shot based on a detected attention area, including panning and zooming, in light of the teachings of Osberger and Geigel, in the entertainment system of Stelovsky, in order to further refine the content information of an image by focusing on the attention-attracting elements in the photo to video, when used as the background for karaoke entertainment [Claims 38 & 43].

### ***Conclusion***

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Chakraborty et al. (US 6,462,754 B) discloses a method of editing video data which segments video data into shots using the motion of objects of interest.

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- Chen et al. (US 5,751,378) discloses shot detection between scene breaks by analyzing luminance and contrast.
- Fujita (US 5,827,990) discloses a karaoke apparatus which synchronizes a music clip with a background scene and a word track.
- Kato et al. (US 5,810,603) discloses a karaoke network that transmits and receives karaoke data from a central station via a network.
- Marshall et al. (US 2002/0097259 A1) discloses a pay service for generating custom products from home videos and photograph collections.
- Narusawa et al. (US 5,863,206) discloses a karaoke apparatus for matching video characters with music and text on a display.
- Nieweglowski et al. (US 2002/0044604) discloses analyzing video clips and selecting frames based on non-uniform entropy distributions.
- Qi et al. (US 2002/0196974 A1) discloses a method for shot boundary detection of video content using the video's color histogram.
- Ratakonda (US 5,956,026) discloses a method of digital video summarization using histograms of the keyframes of a digital video signal.
- Shaffer et al. (US 2001/0046330 A1) discloses a method of creating photo CD slideshow collage from a customer's photographic prints and digital photos.
- Strasser et al. (US 2004/0177744 A1) discloses a karaoke apparatus that evaluates the sentences and sound sung and displays the singer's performance.
- Tada (US 5,982,980) discloses a karaoke apparatus that displays background pictures related to the genre of a music piece.
- Tsumura et al. (US 5,294,746) discloses a mixing device for music sub-clips that communicates with karaoke terminals by modem.

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- Umeda et al. (US 5,453,570) discloses karaoke authoring apparatus which synchronizes music and lyrics with segmented video clips or still pictures.
- Yan et al. (US 6,792,144 B1) discloses a method of extracting feature information from video using a user attention model comprising edge detection of faces and eyes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolai A. Gishnock whose telephone number is 571-272-1420. The examiner can normally be reached on M-F 8:30a-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert E. Pezzuto can be reached on 571-272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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